

# CANDOHM REFERENCE CHARTS



1934  
CANDOHM  
REFERENCE  
CHARTS  
4-1-34

THE MUTER COMPANY  
1255 South Michigan Avenue  
CHICAGO, ILLINOIS, U.S.A.

## WIRE WOUND CANDOHM FIXED RESISTORS

Standard Equipment in the Leading Sets

Candohms are guaranteed to lower your costs.  
Candohms offer a production and initial cost saving.  
Candohms permanent mounting eliminates vibration problems.  
Candohms greatly assist sectional production testing.  
Candohms are ideal for the following important uses:

- |                      |                        |
|----------------------|------------------------|
| Voltage Dividers     | Insulated Terminals    |
| Cathode Biases       | Floating Grounds       |
| Pilot Light Reducers | Accuracy and Tolerance |

### CANDOHM TECHNICAL DETAILS

TYPES OF UNITS	G	F	FH	J
Watts per inch.....	1.0	2.0	5.0	.75
Width .....	.5"	.8125"	.8125"	.25"
Ohms per inch.....	0-15000	0-25000	0-10000	0-5000
Length .....	1"-10"	1"-12"	1"-12"	.75"-2"
Terminal Length.....	.5" Stan.	.5" Stan.	.5" Stan.	1" Stan.
Terminal Width .....	.25"	.25"	.25"	.1875"
Mounting Holes .....	.138 Stan.	.138 Stan.	.138 Stan.	None
Tolerance .....	Up to 2%	Up to 2%	Up to 5%	Up to 2%
Normal Tolerance.....	±10%	±10%	±10%	±10%
Temperature Rated Load..	100° F.	120° F.	220° F.	110° F.

### SPECIAL NOTES

**Terminals**—Are coke tin for quick soldering.

**Factor of Safety**—All units, except type FH, dissipate their rated amount at approximately 120° F. and will stand a constant duty overload of 50% without exceeding 200° F. Location of unit in chassis causes this to vary somewhat.

**Maximum Radiation**—Is secured when unit is riveted to chassis.

**Type FH**—is wound on a special asbestos core which accounts for the wider tolerance. Normal FH temperature at 5 watts per inch is 220° F.

**Mounting Centers**—Are .562 inch longer than actual winding.

**Minimum Distance**—Between terminals should be not less than .250 inch to assist production soldering and tolerance.

### NOMENCLATURE

Letters following the type of unit designate the following:

C=center tap .....  
O—one end mounting .....  
B=special blue case .....  
N=no mounting lugs .....

E=end terminals .....  
S=special mounting or lugs .....  
OP=one end perpendicular mounting .....  
VC=variable center tap .....  
VCB=variable center tap with bias resistor .....

### SAMPLES WITH SPEED

A special department is maintained to forward samples immediately. It is a pleasure to serve you.



Dependable



Candohms

## DROP IN VOLTS

		VOLTAGE DROP																		
		E=IR																		
		E=Volts																		
		I=Current																		
		R=Resistance																		
1000	50	100	200	300	400	500	600	700	800	900	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
900	45	90	180	270	360	450	540	630	720	810	900	1800	2700	3600	4500	5400	6300	7200	8100	9000
800	40	80	160	240	320	400	480	560	640	720	800	1600	2400	3200	4000	4800	5600	6400	7200	8000
700	35	70	140	210	280	350	420	490	560	630	700	1400	2100	2800	3500	4200	4900	5600	6300	7000
600	30	60	120	180	240	300	360	420	480	540	600	1200	1800	2400	3000	3600	4200	4800	5400	6000
500	25	50	100	150	200	250	300	350	400	450	500	1000	1500	2000	2500	3000	3500	4000	4500	5000
480	24	48	96	144	192	240	288	336	384	432	480	960	1440	1920	2400	2880	3360	3840	4320	4800
460	23	46	92	138	184	230	276	322	368	414	460	920	1380	1840	2300	2760	3220	3680	4140	4600
440	22	44	88	132	176	220	264	308	352	396	440	880	1320	1760	2200	2640	3080	3520	3960	4400
420	21	42	84	126	168	210	252	294	336	378	420	840	1260	1680	2100	2520	2940	3360	3780	4200
400	20	40	80	120	160	200	240	280	320	360	400	800	1200	1600	2000	2400	2800	3200	3600	4000
380	19	38	76	114	152	190	228	266	304	342	380	760	1140	1520	1900	2280	2660	3040	3420	3800
360	18	36	72	108	144	180	216	252	288	324	360	720	1080	1440	1800	2160	2520	2880	3240	3600
340	17	34	68	102	136	170	204	238	272	306	340	680	1020	1360	1700	2040	2380	2720	3060	3400
320	16	32	64	96	128	160	192	224	256	288	320	640	960	1280	1600	1920	2240	2560	2880	3200
300	15	30	60	90	120	150	180	210	240	270	300	600	900	1200	1500	1800	2100	2400	2700	3000
280	14	28	56	84	112	140	168	196	224	252	280	560	840	1120	1400	1680	1960	2240	2520	2800
260	13	26	52	78	104	130	156	182	208	234	260	520	780	1040	1300	1560	1820	2080	2340	2600
240	12	24	48	72	96	120	144	168	192	216	240	480	720	960	1200	1440	1680	1920	2160	2400
220	11	22	44	66	88	110	132	154	176	198	220	440	660	880	1100	1320	1540	1760	1980	2200
200	10	20	40	60	80	100	120	140	160	180	200	400	600	800	1000	1200	1400	1600	1800	2000
180	9	18	36	54	72	90	108	126	144	162	180	360	540	720	900	1080	1260	1440	1620	1800
160	8	16	32	48	64	80	96	112	128	144	160	320	480	640	800	960	1120	1280	1440	1600
140	7	14	28	42	56	70	84	98	112	126	140	280	420	560	700	840	980	1120	1260	1400
120	6	12	24	36	48	60	72	84	96	108	120	240	360	480	600	720	840	960	1080	1200
100	5	10	20	30	40	50	60	70	80	90	100	200	300	400	500	600	700	800	900	1000
95	4.7	9.5	19	28.5	38	47.5	57	66.5	76	85.5	95	190	285	380	475	570	665	760	855	950
90	4.5	9	18	27	36	45	54	63	72	81	90	180	270	360	450	540	630	720	810	900
85	4.2	8.5	17	25.5	34	42.5	51	59.5	68	76.5	85	170	255	340	425	510	595	680	765	850
80	4.0	8	16	24.0	32	40	48	56.0	64	72.0	80	160	240	320	400	480	560	640	720	800
75	3.7	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	150	225	300	375	450	525	600	675	750
70	3.5	7	14	21	28	35	42	49.0	56	63.0	70	140	210	280	350	420	490	560	630	700
65	3.2	6.5	13	19.5	26	32.5	39	45.5	52	58.5	65	130	195	260	325	390	455	520	585	650
60	3.0	6	12	18.0	24	30	36	42.0	48	54.0	60	120	180	240	300	360	420	480	540	600
55	2.7	5.5	11	16.5	22	27.5	33	38.5	44	49.5	55	110	165	220	275	330	385	440	495	550
50	2.5	5.0	10	15	20	25	30	35.0	40	45.0	50	100	150	200	250	300	350	400	450	500
45	2.2	4.5	9	13.5	18	22.5	27	31.5	36	40.5	45	90	135	180	225	270	315	360	405	450
40	2.0	4	8	12.0	16	20	24	28.0	32	36.0	40	80	120	160	200	240	280	320	360	400
35	1.7	3.5	7	10.5	14	17.5	21	24.5	28	31.5	35	70	105	140	175	210	245	280	315	350
30	1.5	3	6	9.0	12	15	18	21.0	24	27.0	30	60	90	120	150	180	210	240	270	300
25	1.2	2.5	5	7.5	10	12.5	15	17.5	20	22.5	25	50	75	100	125	150	175	200	225	250
20	1.0	2	4	6.0	8.0	10.0	12	14.0	16	18.0	20	40	60	80	100	120	140	160	180	200
15	.7	1.5	3	4.5	6.0	7.5	9	10.5	12	13.5	15	30	45	60	75	90	105	120	135	150
10	.5	1.0	2.0	3.0	4.0	5.0	6	7.0	8	9.0	10	20	30	40	50	60	70	80	90	100
5	.25	.50	1.0	1.5	2.0	2.5	3.0	3.5	4	4.5	5	10	15	20	25	30	35	40	45	50
	50	100	200	300	400	500	600	700	800	900	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000

RESISTANCE IN OHMS.

Dependable **MUTER** Candohms

POWER IN WATTS

**WATT  
CHART**

**W=I<sup>2</sup>R**  
**W=Watts**  
**I=Current**  
**R=Resistance**

CURRENT IN MILLI-AMPERES

1000	50	100	200	300	400	500	600	700	800	900	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000
900	40.5	81.0	162	243	324	405	486	567	648	729	810	1620	2430	3240	4050	4860	5670	6480	7290	8100
800	32.0	64.0	128	192	256	320	384	448	512	576	640	1280	1920	2560	3200	3840	4480	5120	5760	6400
700	24.5	49.0	98.0	147	196	245	294	343	392	441	490	980	1470	1960	2450	2940	3430	3920	4410	4900
600	18.0	36.0	72.0	108	144	180	216	252	288	324	360	720	1080	1440	1800	2160	2520	2880	3240	3600
500	12.5	25.0	50.0	75.0	100	125	150	175	200	225	250	500	750	1000	1250	1500	1750	2000	2250	2500
480	11.5	23.0	46.0	69.1	92.1	115	138	161	184	207	230	460	691	921	1152	1382	1612	1843	2073	2304
460	10.5	21.1	42.3	63.4	84.6	105	126	148	169	190	211	423	634	846	1058	1269	1481	1692	1904	2116
440	9.6	19.3	38.7	58.0	77.4	96.8	116	135	154	174	193	387	580	774	968	1161	1355	1548	1742	1936
420	8.8	17.6	35.2	52.9	70.5	88.2	105	123	141	158	176	352	529	705	882	1058	1234	1411	1587	1764
400	8.0	16.0	32.0	48.0	64.0	80.0	96.0	112	128	144	160	320	480	640	800	960	1120	1280	1440	1600
380	7.2	14.4	28.8	43.3	57.7	72.2	86.6	101	115	129	144	288	433	577	722	866	1010	1155	1299	1444
360	6.4	12.9	25.9	38.8	51.8	64.8	77.7	90.7	103	116	129	259	388	518	648	777	907	1036	1166	1296
340	5.7	11.5	23.1	34.6	46.2	57.8	69.3	80.9	92.4	104	115	231	346	462	578	693	809	924	1040	1156
320	5.1	10.2	20.4	30.7	40.9	51.2	61.4	71.6	81.9	92.1	102	204	307	409	512	614	716	819	921	1024
300	4.5	9.0	18.0	27.0	36.0	45.0	54.0	63.0	72.0	81.0	90.0	180	270	360	450	540	630	720	810	900
280	3.9	7.8	15.6	23.5	31.3	39.2	47.0	54.8	62.7	70.5	78.4	156	235	313	392	470	548	627	705	784
260	3.3	6.7	13.5	20.2	27.0	33.8	40.5	47.3	54.0	60.8	67.6	135	202	270	338	405	473	540	608	676
240	2.8	5.7	11.5	17.2	23.0	28.8	34.5	40.3	46.0	51.8	57.6	115	172	230	288	345	403	460	518	576
220	2.4	4.8	9.6	14.5	19.3	24.2	29.0	33.8	38.7	43.5	48.4	96	145	193	242	290	338	387	435	484
200	2.0	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	80	120	160	200	240	280	320	360	400
180	1.6	3.2	6.4	9.72	12.9	16.2	19.4	22.6	25.9	29.1	32.4	64.0	97.2	129	162	194	226	259	291	324
160	1.2	2.5	5.1	7.68	10.2	12.8	15.3	17.9	20.4	23.0	25.6	51.2	76.8	102	128	153	179	204	230	256
140	.98	1.9	3.9	5.88	7.8	9.8	11.7	13.7	15.6	17.6	19.6	39.2	58.8	78.4	98	117	137	156	176	196
120	.72	1.4	2.8	4.32	5.7	7.2	8.6	10.0	11.5	12.9	14.4	28.8	43.2	57.6	72.0	86.4	100	115	129	144
100	.50	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100
95	.45	.90	1.80	2.7	3.6	4.5	5.4	6.31	7.2	8.1	9.0	18.0	27.0	36.1	45.1	54.1	63.1	72.2	81.2	90.2
90	.40	.81	1.62	2.43	3.24	4.0	4.86	5.67	6.48	7.29	8.1	16.2	24.3	32.4	40.5	48.6	56.7	64.8	72.9	81.0
85	.36	.72	1.44	2.16	2.89	3.6	4.33	5.05	5.78	6.5	7.2	14.4	21.6	28.9	36.1	43.3	50.5	57.8	65.0	72.2
80	.32	.64	1.28	1.92	2.56	3.2	3.84	4.48	5.12	5.76	6.4	12.8	19.2	25.6	32.0	38.4	44.8	51.2	57.6	64.0
75	.28	.56	1.12	1.68	2.25	2.8	3.37	3.93	4.50	5.06	5.6	11.2	16.8	22.5	28.1	33.7	39.3	45.0	50.6	56.2
70	.24	.49	.98	1.47	1.96	2.45	2.94	3.43	3.92	4.41	4.9	9.8	14.7	19.6	24.5	29.4	34.3	39.2	44.1	49.0
65	.21	.42	.84	1.26	1.69	2.1	2.53	2.95	3.38	3.8	4.2	8.4	12.6	16.9	21.1	25.3	29.5	33.8	38.0	42.2
60	.18	.36	.72	1.08	1.44	1.8	2.16	2.52	2.88	3.2	3.6	7.2	10.8	14.4	18.0	21.6	25.2	28.8	32.4	36.0
55	.15	.30	.60	.90	1.21	1.5	1.81	2.11	2.42	2.72	3.0	6.0	9.0	12.1	15.1	18.1	21.1	24.2	27.2	30.2
50	.12	.25	.50	.75	1.00	1.25	1.5	1.75	2.00	2.25	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0
45	.10	.20	.40	.60	.81	1.01	1.21	1.41	1.62	1.82	2.0	4.0	6.0	8.1	10.1	12.1	14.1	16.2	18.2	20.2
40	.08	.16	.32	.48	.64	.80	.96	1.12	1.28	1.44	1.6	3.2	4.8	6.4	8.0	9.6	11.2	12.8	14.4	16.0
35	.06	.12	.24	.36	.49	.61	.73	.85	.98	1.1	1.2	2.4	3.6	4.9	6.1	7.3	8.5	9.8	11.0	12.2
30	.04	.09	.18	.27	.36	.45	.54	.63	.72	.81	.9	1.8	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0
25	.03	.06	.12	.18	.25	.31	.37	.43	.50	.56	.6	1.2	1.8	2.5	3.1	3.7	4.3	5.0	5.6	6.2
20	.02	.04	.08	.12	.16	.20	.24	.28	.32	.36	.4	.8	1.2	1.6	2.0	2.4	2.8	3.2	3.6	4.0
15	.01	.02	.04	.06	.09	.11	.13	.15	.18	.20	.22	.45	.67	.9	1.1	1.35	1.57	1.8	2.0	2.2
10	.005	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	.2	.30	.4	.5	.6	.7	.8	.9	1.0
5	.001	.002	.005	.007	.01	.012	.015	.017	.02	.022	.025	.05	.07	.10	.125	.15	.17	.2	.22	.25
	50	100	200	300	400	500	600	700	800	900	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000

RESISTANCE IN OHMS.

POWER IN WATTS

1000	20000	10000	5000	3333	2500	2000	1666	1428	1250	1111	1000	500	333	250	200	166	142	125	111	100
900	16200	8100	4050	2700	2025	1620	1350	1157	1012	900	810	405	270	202	162	135	115	101	90	81
800	12800	6400	3200	2133	1600	1280	1066	914	800	711	640	320	213	160	128	106	91	80	71	64
700	9800	4900	2450	1633	1225	980	816	700	612	544	490	245	163	122	98	81	70	61	54	49
600	7200	3600	1800	1200	900	720	600	514	450	400	360	180	120	90	72	60	51	45	40	36
500	5000	2500	1250	833	625	500	416	357	312	277	250	125	83	62	50	41	35	31	27	25
480	4608	2304	1152	768	576	460	384	329	288	256	230	115	76	57	46	38	32	28	25	23
460	4232	2116	1058	705	529	423	352	302	264	235	211	105	70	52	42	35	30	26	23	21
440	3872	1936	968	645	484	387	322	276	242	215	193	96	64	48	38	32	27	24	21	19
420	3528	1764	882	588	441	352	294	252	220	196	176	88	58	44	35	29	25	22	19	17
400	3200	1600	800	533	400	320	266	228	200	177	160	80	53	40	32	26	22	20	17	16
380	2888	1444	722	481	361	288	240	206	180	160	144	72	48	36	28	24	20	18	16	14
360	2592	1296	648	432	324	259	212	185	162	144	129	64	43	32	25	21	18	16	14	12
340	2312	1156	578	385	289	231	191	165	144	128	115	57	38	28	23	19	16	14	12	11
320	2048	1024	512	341	256	204	170	146	128	113	102	51	34	25	20	17	14	12	11	10
300	1800	900	450	300	225	180	150	128	112	100	90	45	30	22	18	15	12	11	10.0	9.0
280	1568	784	392	261	196	156	130	112	98	87	78	39	26	19	15	13	11	9.8	8.7	7.8
260	1352	676	338	225	169	135	112	96	84	75	67	33	22	16	13	11	9.6	8.4	7.5	6.7
240	1152	576	288	192	144	115	96	82	72	64	57	28	19	14	11	9.6	8.2	7.2	6.4	5.7
220	968	484	242	161	121	96	80	69	60	53	48	24	16	12	9.6	8.0	6.9	6.0	5.3	4.8
200	800	400	200	133	100	80	66	57	50	44	40	20	13	10	8.0	6.6	5.7	5.0	4.4	4.0
180	648	324	162	108	81	64	54	46	40	36	32	16	10	8.1	6.4	5.4	4.6	4.0	3.6	3.2
160	512	256	128	85	64	51	42	36	32	28	25	12	8.5	6.4	5.1	4.2	3.6	3.2	2.8	2.5
140	392	196	98	65	49	39	32	28	24	21	19	9.8	6.5	4.9	3.9	3.2	2.8	2.4	2.1	1.9
120	288	144	72	48	36	28	24	20	18	16	14	7.2	4.8	3.6	2.8	2.4	2.0	1.8	1.6	1.4
100	200	100	50	33	25	20	16	14	12	11	10	5.0	3.3	2.5	2.0	1.6	1.4	1.2	1.1	1.0
95	180	90	45	30	22	18	15	12	11	10	9.0	4.5	3.0	2.2	1.8	1.5	1.2	1.1	1.0	.90
90	162	81	40	27	20	16	13	11	10	9.0	8.1	4.0	2.7	2.0	1.6	1.3	1.1	1.0	.90	.81
85	144	72	36	24	18	14	12	10	9.0	8.0	7.2	3.6	2.4	1.8	1.4	1.2	1.0	.90	.80	.72
80	128	64	32	21	16	12	10	9.1	8.0	7.1	6.4	3.2	2.1	1.6	1.2	1.0	.91	.80	.71	.64
75	112	56	28	18	14	11	9.3	8.0	7.0	6.2	5.6	2.8	1.8	1.4	1.1	.93	.80	.70	.62	.56
70	98	49	24	16	12	9.8	8.1	7.0	6.1	5.4	4.9	2.4	1.6	1.2	.98	.81	.70	.61	.54	.49
65	84	42	21	14	10	8.4	7.0	6.0	5.2	4.6	4.2	2.1	1.4	1.0	.84	.70	.60	.52	.46	.42
60	72	36	18	12	9.0	7.2	6.0	5.1	4.5	4.0	3.6	1.8	1.2	.90	.72	.60	.51	.45	.40	.36
55	60	30	15	10	7.5	6.0	5.0	4.3	3.7	3.3	3.0	1.5	1.0	.75	.60	.50	.43	.37	.33	.30
50	50	25	12	8.3	6.2	5.0	4.1	3.5	3.1	2.7	2.5	1.2	.83	.62	.50	.41	.35	.31	.27	.25
45	40	20	10	6.7	5.0	4.0	3.3	2.8	2.5	2.2	2.0	1.0	.67	.50	.40	.33	.28	.25	.22	.20
40	32	16	8.0	5.3	4.0	3.2	2.6	2.2	2.0	1.7	1.6	.80	.53	.40	.32	.26	.22	.20	.17	.16
35	24	12	6.1	4.0	3.0	2.4	2.0	1.7	1.5	1.3	1.2	.61	.40	.30	.24	.20	.17	.15	.13	.12
30	18	9.0	4.5	3.0	2.2	1.8	1.5	1.2	1.1	1.0	.90	.45	.30	.22	.18	.15	.12	.11	.10	.09
25	12	6.2	3.1	2.0	1.5	1.2	1.0	.89	.78	.69	.62	.31	.20	.15	.12	.10	.08	.07	.069	.06
20	8.0	4.0	2.0	1.3	1.0	.80	.66	.57	.50	.44	.40	.20	.13	.10	.08	.06	.057	.05	.044	.04
15	4.5	2.2	1.1	.75	.56	.45	.37	.32	.28	.25	.22	.11	.07	.05	.04	.037	.032	.028	.025	.02
10	2.0	1.0	.50	.33	.25	.20	.16	.14	.12	.11	.10	.05	.03	.025	.020	.016	.014	.012	.011	.01
5	.50	.25	.12	.08	.06	.05	.04	.035	.03	.027	.025	.012	.008	.006	.005	.004	.003	.003	.002	.002
	50	100	200	300	400	500	600	700	800	900	1000	2000	3000	4000	5000	6000	7000	8000	9000	10000

RESISTANCE IN OHMS

WATT  
CHART

$$W = \frac{E^2}{R}$$

W=Watts

E=Volts

R=Resistance